

Attorney Docket No. 07414.0104-01000
Serial No. 09/724,730

IN THE CLAIMS

1. (currently amended) A composition for detecting two or more target nucleic acid sequences comprising:

a first complex comprising:

a first probe comprising a first target-specific portion for sequence-specific hybridization to a first target nucleic acid sequence ~~that is flanked at each end by two adjacent sequence regions~~, and a first tag that is designed not to hybridize to said adjacent sequence regions when the first target-specific portion is sequence specifically hybridized to the first target nucleic acid sequence that does not comprise any portion of the target-specific portion of the first probe; and

a first mobility-modifier comprising a first tail and a first tag complement for binding to the first tag; and

a first nucleic acid sequence comprising a first target nucleic acid sequence; and

a second complex comprising:

a second probe comprising a second target-specific portion for sequence-specific hybridization to a second target nucleic acid sequence ~~that is flanked at each end by two adjacent sequence regions~~, and a second tag ~~that is designed not to hybridize to the second said adjacent sequence regions when the second target-specific portion is sequence specifically hybridized to the second target nucleic acid sequence that~~

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does not comprise any portion of the target-specific portion of the second probe; and

a second mobility-modifier comprising a second tail and a second tag complement for binding to the second tag; and

a second nucleic acid sequence comprising a second target nucleic acid sequence;

wherein a mobility of a first binary composition comprising the first complex probe bound to the first mobility-modifier, in a mobility-dependent analysis technique is distinguishable from a mobility of a second binary composition comprising the second complex probe bound to the second mobility-modifier, in the mobility-dependent analysis technique; and

wherein the first complex and the second complex are present as a mixture.

2. (currently amended) The composition of ~~claim 4~~ claim 1 wherein the first target-specific portion comprises polynucleotide.
3. (currently amended) The composition of ~~claim 2~~ claim 2 wherein the first target-specific portion comprises a 3'-hydroxyl group.
4. (currently amended) The composition of ~~claim 2~~ claim 2 wherein the first target-specific portion comprises PNA.
5. (currently amended) The composition of ~~claim 4~~ claim 1 wherein the first tag ~~portion~~ comprises polynucleotide.
6. (currently amended) The composition of ~~claim 5~~ claim 5 wherein the first tag ~~portion~~ comprises PNA.

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7. (currently amended) The composition of ~~claim 4~~ claim 1 wherein the first tag complement ~~portion is~~ comprises PNA.
8. (currently amended) The composition of ~~claim 4~~ claim 1 wherein both the first tag and first tag complement ~~[[are]]~~ comprise polynucleotide, and one of the first tag complement and first tag comprises a sequence selected from ~~the group consisting of~~ (CAG)_n and (TCC)_n wherein n is 1 to 10.
9. (currently amended) The composition of ~~claim 4~~ claim 1 wherein the first ~~mobility modifier comprises~~ a tail portion that is at least partially not polynucleotide.
10. (currently amended) The composition of ~~claim 4~~ claim 1 wherein the first tail ~~[[is]]~~ comprises a polymer.
11. (currently amended) The composition of ~~claim 10~~ claim 10 wherein the polymer is selected from ~~the group consisting of~~ polyethyleneoxide and polypeptide.
12. (currently amended) The composition of ~~claim 4~~ claim 1 further comprising a hybridization enhancer.
- 13-26. (canceled)
27. (new) A composition for detecting two or more target nucleic acid sequences comprising:
 - a first complex comprising:
 - a first probe comprising a first target-specific portion for sequence-specific hybridization to a first target nucleic acid sequence and a first tag;
 - a first mobility-modifier comprising a first tail and a first tag complement for binding to the first tag; and

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a first nucleic acid sequence comprising a first target nucleic acid sequence; and
a second complex comprising:
a second probe comprising a second target-specific portion for sequence-specific hybridization to a second target nucleic acid sequence and a second tag;
a second mobility-modifier comprising a second tail and a second tag complement for binding to the second tag; and
a second nucleic acid sequence comprising a second target nucleic acid sequence;

wherein a mobility of a first binary composition comprising the first probe bound to the first mobility-modifier, in a mobility-dependent analysis technique is distinguishable from a mobility of a second binary composition comprising the second probe bound to the second mobility-modifier, in the mobility-dependent analysis technique; and

wherein the first complex and the second complex are present as a mixture.

28. (new) The composition of claim 27 wherein the first target-specific portion comprises polynucleotide.
29. (new) The composition of claim 28 wherein the first target-specific portion comprises a 3'-hydroxyl group.
30. (new) The composition of claim 28 wherein the first target-specific portion comprises PNA.

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31. (new) The composition of claim 27 wherein the first tag comprises polynucleotide.
32. (new) The composition of claim 31 wherein the first tag comprises PNA.
33. (new) The composition of claim 27 wherein the first tag complement comprises PNA.
34. (new) The composition of claim 27 wherein both the first tag and first tag complement comprise polynucleotide, and one of the first tag complement and first tag comprises a sequence selected from $(CAG)_n$ and $(TCC)_n$ wherein n is 1 to 10.
35. (new) The composition of claim 27 wherein the first tail is at least partially not polynucleotide.
36. (new) The composition of claim 27 wherein the first tail comprises a polymer.
37. (new) The composition of claim 36 wherein the polymer is selected from polyethyleneoxide and polypeptide.
38. (new) The composition of claim 27 further comprising a hybridization enhancer.

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